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ABSTRACT

The Delaware Educational Assessment Program accountability model is based on the performance assessment procedure initially described by Dyer, which utilizes background information of students to estimate educational outcomes. The difference between the estimate and the actual outcome is defined as a "need" in this application. This accountability model, which has been applied in the State of Delaware, has serious shortcomings in its underlying assumptions and definitions. Survey data collected from teachers (N=112) and lay persons (N=102) indicate that there is little consensus about what the accountability model should be doing, although more than 9 out of 10 teacher respondents would not, in practice, endorse its prescriptions for resource allocations. Several suggestions are offered for the model's reconstruction and its interpretation to teachers and lay persons. (Author)

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CRITIQUE OF THE DELAWARE EDUCATIONAL ASSESSMENT ACCOUNTABILITY MODEL

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Several state and local school systems have attempted to devise or adapt procedures for identifying the productivity of schools and school systems. Usually developed by professional measurement and evaluation specialists, such accountability models de ve critical review by the profession. Not only should the logi the models be carefully reviewed, but obvious or potential biases inherent in the application of the models should be clearly pointed out. The focus of this paper is the Delaware Educational Assessment Program (DEAP) Accountability Model which is fashioned after a set of procedures initially formulated by the Pennsylvania Department of Public Instruction. The substance of this discussion consists of a critical review of the DEAP model, supplemented by empirical survey data which indicates a widespread lack of understanding and consensus among teachers and laymen concerning this model and its implications for the Delaware Public Schools.

The Model

Henry Dyer boldly proclaimed in 1970 that the performance of school systems could be measured. He argued that the indicators of output of a school system should be valued only insofar as the effect of input factors outside the school's domain could be controlled. In other words, any assessment of effectiveness should not simply review the level of achievement of students who pass through the system, but should also take account of relevant student characteristics upon entering the school and the external factors (e.g., socio-economic status) which have an influence on the learning

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within the school. According to Dyer, these controls can be accomplished statistically by first regressing final output achievement on prior achievement and other factors such as socio-economic status. Once this has been done, then output achievement could be estimated from these factors, and the difference between the estimate and the actual achievement observed. The difference between estimated and actual achievement then reflects whether a particular educational program is performing above or below what could be expected from the background given and can be used as an indicator of program effectiveness.

Application of the Model

The Delaware Department of Public Instruction has utilized Dyer's regression model to provide what is described as a "needs assessment." The picture is complicated by the fact that needs are defined in two different ways: (1) needs are equal to goals minus achievement, and (2) needs are equal to the difference between what achievement can be expected (with application of Dyer's performance model) and what is actually observed, i.e., the difference between actual and estimated achievement. In their terms: "If a school performs as well as predicted, we can, by definition, say it has resched its goal . . . . On the other hand if a school does not do as well as predicted, a 'need' has been established." This is an implicit accountability model, for a criterion for performance is clearly identified for each school included in the assessment. The model has been utilized twice on real data, and the results shared with all school districts in the state.

Problems with the Model

On consideration of the implications of this model, it appears that schools would be held accountable only for what they could be expected

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to produce, given the background factors that statistically influence achievement. There is no mechanism for raising the sights of schools which are predicted to produce low achievement; they are simply designated as having no needs if the actual and predicted achievement matches, though in fact the achievement is quite low. We think that many educators would find this definition untenable.

Problems in Interpretation

Small surveys of beliefs about these accountability issues were conducted. The subjects were 112 teachers doing graduate work (mostly summer school) and 102 parents from three lower- to upper-middle class districts in northern Delaware. Educational background, SES level, and whether or not they had school-age children had little effect on any responses to the survey questions on accountability.

The most interesting findings from this survey were:

(1) Teachers and parents responded very much alike except on the topic of statewide goals.

Teachers (roughly 75%) showed more of a tendency to affirm statewide goals (50%), to agree on what priorities ought to be assigned to each goal, and to expect similar achievement from schools having the similar goals and priorities (Items 6, 7, 8). These differences may be due to the fact that teachers probably were more aware of arguments for statewide goals and priorities.

(2) Both groups, with essentially the same reservations, thought an industrial systems analysis model was applicable to the school setting.

It appears from responses to Item 10 that people were interested in the relationship between input and output in schools although it seems reasonable to speculate that further questioning might reveal more than a strictly "economic" dimension to this topic.

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(3) Almost the exact same proportions of teachers as parents claimed no understanding of the DPI Delaware Educational Assessment Program.

Item 9 suggests that even though they teach in the system and are considered the prime target of accountability, teachers acknowledge no special information that made them feel more informed than the public.

(4) Even though the majority of teachers and parents said they agreed with the DEAP definition of need as the difference between "expectations and achievement," on several separate items (5, 11, 12) their responses indicated that their working definition of need also included the notion of absolute quality standards. For example, in some low achievement school districts, the regression model may assign low expectations which are being matched by student performance, but most reasonable people would still insist that the districts still have needs in these areas.

In Items 11 and 12, among both parents and teachers the lower the perceived rate in development of reading skills of the respondents school district the greater the reading needs were assumed to be ($r = .59$). In addition, even though 16 and 22% of teachers and parents, respectively, saw their district "well above average" in reading skills, only 2 and 3% respectively, saw no needs in the reading area. It appears that the tendency to define needs necessitates knowledge of more than a district average.

In regard to a low SES district in which students are below average in achievement but which is said to be "doing about as well as other districts with similar problems," parents and teachers had an equally positive tendency to assign resources regardless of whether deficient achievement is cognitive or affective. Parents were somewhat more hard nosed and more often wanted improvements to follow if the resources were given.

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Both parents and teachers were evenly split (Item 13) on whether needs ought to be defined as differences between "achievement and goals" (46% each) or "expectations and achievement" (42%). This may be a "coin-toss effect" due to the potentially similar meaning of the two alternatives. In the next question, 57 and 68% of teachers and parents, respectively, think that "need" as the difference between expectation and achievement is a valid definition, 15 and 26% were willing to switch from their answers on the previous questions.

The wording of this model is quite ambiguous and hard to operationally define. Many respondents claim to accept the definition of need as defined by the model, yet their answers to a question requiring application of the model indicate they would really use more of a "depreciation-requires-equalization" model to define need. A general lack of consistency in many of the responses was interpreted as meaning that many lacked the skills, training and information necessary to make sound judgments about accountability issues.

Conclusions

The application of this model is inconsistent in its basic definitions, its assumptions concerning resource allocation run counter to common inclinations of those involved with schools, and the results are quite ambiguous. The DEAP needs assessment model should at least be revised to take account of needs as teachers empirically define them. The survey respondents seemed to be saying that schools have needs if they are producing less than they could under the best of conditions. This model would be improved by adapting a "base line" for a minimum standard of performance as in the model designed by McDonald and Forehand. "The relative index of how well schools are doing must always be judged against the absolute performance of their students with respect to minimum standards." This model

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wou'd be consistent with the views of the majority of survey respondents, who would allocate resources to schools who were achieving at below-average levels, even though the schools were doing as good a job as could be expected. Many respondents could be more comfortable with a model which linked expanded resources to achievement deficiency and was less contrary to contemporary social theory. Extensive efforts should be made to familiarize all those involved in schooling with any accountability system which is utilized.

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TOTAL RESPONSES

Survey on Accountability

	Teachers (N=112)	Public (N=102)
	%	
1. What is your highest educational attainment?		
1. elementary school	0	0
2. middle or junior high school	0	2
3. high school	2.7	28
4. college	16.1	42.6
5. graduate work	81.3	27.7
2. Where does your occupation fit on the following scale?		
1. professional	88	45
2. semi-professional or business	8	30
3. skilled	3	17
4. semi-skilled	0	7
5. unskilled labor	1	2
3. Do you have school age children?		
1. no	80	2
2. yes	20	98
4. Where does the school district in which you live rank in development of reading skills?		
1. well above average	16	22
2. slightly above average	32	43
3. about the middle	30	27
4. slightly below average	16	8
5. well below average	6	1
5. How would you describe your school district's educational needs in terms of reading achievement?		
1. no needs	2	3
2. a few needs	27	55
3. a few major needs	38	31
4. serious needs	21	11

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	Teachers	Public
6. Should all districts in the state have the same goals?		
1. no	71	48
2. yes	29	52
7. Should all districts with the same goals have the same priorities for goals?		
1. no	83	67
2. yes	17	33
8. Should different school districts which have the same goals and attach the same priorities to them should show about the same level of accomplishment of these goals?		
1. no	74	52
2. yes	26	48
9. The State Department of Public Instruction has recently published some general discussions of their assessment ideas. Do you understand what the DEAP is all about?		
1. no	63	66
2. slight understanding	29	27
3. good understanding	8	8
10. Do you think education should follow the lead of some industries and closely study the relationship between what the system has to work with and the product it turns out?		
1. yes, it is a very good idea.	21	26
2. probably, but it has its limitations.	47	46
3. I'm not sure.	12	14
4. probably not.	5	6
5. no, it is not appropriate for schools.	14	9
11. Do you think additional statewide resources should be spent on improving the reading comprehension of students from a low SES district who are achieving about what can be expected under those conditions?		
1. no, more resources should be given	3	8
2. probably not.	6	3
3. yes, if improvements were to follow.	38	53
4. yes, resources should be awarded.	52	35

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		Teachers	Public
12.	Under the same conditions as 11 do you think additional resources should be spent to improve citizenship training?		
	1. no, no more resources should be given	9	5
	2. probably not.	12	7
	3. not sure.	14	8
	4. yes, if improvements were to follow.	39	50
	5. yes, more resources should be awarded.	27	30
13.	Educational needs are the difference between:		
	1. Educational goals and educational accomplishments.	46	46
	2. Educational expectations and educational accomplishment.	41	42
	3. None of the above.	14	13
14.	Does the following statement seem to you to be a good or valid definition?		
	"If the school performs as well as predicted, we can, by definition, say it has reached its goal. On the other hand, if a school does not do as well as predicted, a "need" has been established."		
	1. no	42	32
	2. yes	57	68
15.	If a course on accountability systems was to be offered at the University of Delaware, would you be interested in taking this new course?		
	1. no	52	73
	2. yes	49	27